

To:

see form PCT/ISA220

PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY  
(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA220

FOR FURTHER ACTION  
See paragraph 2 below

International application No.  
PCT/GB2004/050035

International filing date (day/month/year)  
03.12.2004

Priority date (day/month/year)  
03.12.2003

International Patent Classification (IPC) or both national classification and IPC  
H01F17/00, H01F27/28

Applicant  
SOUTH BANK UNIVERSITY ENTERPRISES LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion  
☐ Box No. II Priority  
☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  
☐ Box No. IV Lack of unity of invention  
☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement  
☐ Box No. VI Certain documents cited  
☐ Box No. VII Certain defects in the international application  
☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 56.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA220.

3. For further details, see notes to Form PCT/ISA220.

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
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**Box No. V Reasoned statement under Rule 43b/is.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	1-23,25-36
	No: Claims	24
Inventive step (IS)	Yes: Claims	
	No: Claims	1-36
Industrial applicability (IA)	Yes: Claims	1-36
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Reference is made to the following document:

D1: US 2003/137383 A1 (YANG HUNG YU DAVID ET AL) 24 July 2003 (2003-07-24)

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claim 24** is not new in the sense of Article 33(2) PCT.

The document D1 discloses (the references in parentheses applying to this document): a line interface transformer having a primary circuit for coupling to a transmission line (see page 1, paragraph 15) and a secondary circuit for outputting a signal transmitted over the transmission line (see page 1, paragraphs 2 and 15), each circuit being formed of a continuous electrically conductive material and which the primary circuit defines a first plane and the secondary circuit defines a second plane (see page 1, paragraph 15), the first and second planes parallel to one another (see from page 1, paragraph 17 until page 2, paragraph 18 and Figures 1A, 1B and 1C).

3. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claims 25, 26 and 27** does not involve an inventive step in the sense of Article 33(3) PCT.

- 3.1 Since the line interface transformer mentioned in method **claims 25 and 26** is not new and the remaining method steps, which are considered to be among the customary practice followed by the skilled person, claimed therein do not involve an inventive step, **claims 25 and 26** are rendered as not inventive.
- 3.2 Document D1 discloses, according to the features of **claim 27** insofar they can be understood, a coreless transformer comprising: a primary circuit and a secondary circuit having a number of turns such that the transformer comprises a plurality of layers, each layer having all primary circuits or all secondary conductors (see page 1, paragraph 5 and page 2, paragraphs 23, 24 and Figures 4 and 5). The remaining features are either unclear (see section VIII) or non inventive in the light

of the documents in the International Search Report or well within the knowledge of the skilled person. Claim 27 thus does not involve an inventive step.

4. Dependent claims 1 to 23 and 28 to 36 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, see document cited in the International Search Report and the corresponding passages.

As a further remark, claim 1 comprises all the features of claim 24 as is thus regarded as being a claim dependent thereon. Considering the additional feature of claim 1 wherein the line interface transformer is comprised within a digital subscriber line modem, this feature is regarded as not involving an inventive step. When faced with the technical problem of how to reduce the dimensions of a DSL modem, the skilled person would without involving an inventive step incorporate the transformer of D1, designed for a small footprint and good electromagnetic properties, into a DSL modem reaching thus to the subject-matter of claim 1.

#### **Re Item VIII**

1. The application does not meet the requirements of Article 6 PCT, because claims 1, 4, 11, 19, 20, 21, 24 and 27 are not clear.
  - 1.1 The term "substantially" used in claims 1, 4, 11, 19, 20, 21 and the expression "For use in a DSL modem" used in claim 24 is vague and unclear and leaves the reader in doubt as to the meaning of the technical features to which it refers, thereby rendering the definition of the subject-matter of said claims unclear, Article 6 PCT.
  - 1.2 Claim 27 does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. By referring to "there being a combination of said number of turns and a number of layers sufficient to obtain a transformer action for passing said digital data signal from said primary circuit to said secondary product over said frequency band" the claim attempt to define the subject-matter in terms of the result to be achieved, which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result.

**WRITTEN OPINION OF THE  
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AUTHORITY (SEPARATE SHEET)**

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International application No.

PCT/GB2004/050035